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Terms	Documents
(polymer and particle) and ((buoy$ near20 agent) and (gas or oil))	114

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DATE: Friday, May 19, 2006 Printable Copy Create Case

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DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR			
L3	(polymer and particle) and ((buoy$ near20 agent) and (gas or oil))	114	L3
L2	(polymer and particle) and ((buoy$ near20 agent) same (gas or oil))	41	L2
L1	(polymer same particle) same ((buoy$ near10 agent) same (gas or oil))	2	L1

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FILE 'CAPLUS, MEDLINE' ENTERED AT 15:05:00 ON 19 MAY 2006

L1 50805 S (POLYMER (20A) PARTIC?)

L2 5117 S ((BUOY? OR FLOTAT?) (10A) (AGENT OR MATERIAL))

L3 10 S L1 AND L2

L4 10 DUPLICATE REMOVE L3 (0 DUPLICATES REMOVED)

L4 ANSWER 1 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN
TI **Polymer**-coated sand and ceramic **particles** as proppants for fracturing of petroleum wells
AB Proppants for hydraulic fracturing of, or sand control in, petroleum wells are porous materials treated with selected coatings, glazes, or penetrating materials to achieve a desired mech. (crush) strength or apparent d. to fit the downhole conditions. The porous particulate **material** is a relatively lightwt. or substantially neutrally **buoyant** particles, with crush resistance at closure stresses as high as 10,000 psi, are suspended in a carrier fluid and, when injected into a reservoir, have a porosity and permeability such that the proppants and the carrier fluid are drawn into the reservoir rock by capillary action. Suitable carrier fluids are liquid carbon dioxide and nitrogen. The porous **particles** are coated or penetrated with a liquid resin, **polymer** resin, cement, sealant, or binder, selected from a phenolic resin (e.g., phenol-formaldehyde resin), melamine-formaldehyde resin, polyurethanes, epoxy resins, polyamides, polyethylene, polystyrene, and ethylcarbamate-based resins. The proppant formulations can also contain gelling agents, crosslinking agents, gel breakers, surfactants, foaming agents, demulsifiers, buffers, clay stabilizers, and acids.

L4 ANSWER 2 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN
TI Method and apparatus for rapid separation of wastewater containing suspended particles by flotation
AB The method comprises (1) adding flotation **particles** (e.g., foamed styrol microparticles) and a anion **polymer** coagulant to stick the suspended **particles** to the surface of the floating **particles** for flotation separation, and (2) filtrating the wastewater through a device filled with filtering material (e.g., polypropylene).

L4 ANSWER 3 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN
TI Method for clarification of wastewater containing surfactants
AB A method and apparatus for recovering oil and clarifying wastewater from an oil field are described. The method includes the step of treating the wastewater with an aqueous deemulsifying agent comprising wattle tannin, an inorg. coagulant and a synthetic **polymer** flocculant to destabilize the oil emulsion and rapidly agglomerate the oil **particles** formed thereby. Efficiency of the present deemulsifying **agent** permits use of **flotation** equipment for rapid cleanup of the wastewater and obviates the need for large settling pits.

L4 ANSWER 4 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN
TI The role of surfactants and polymers in the filler flotation from waste paper
AB High contents of fillers such as kaolin or CaCO3 limit the use of waste paper, especially in tissue paper production To determine the effect of flotation reagents on the removal of fillers, adsorption, ζ-potential, and particle size measurements, as well as flotation expts. using model dispersions of CaCO3, kaolin, and cellulose fibers were carried out. The adsorption of the cationic polymer starts at low initial concns. on the neg. charged filler surfaces and cellulose fibers. However, due to the steeper slope of the adsorption isotherm on the fillers, the polymer is preferentially adsorbed on the fillers. Furthermore, the adsorption of the **polymer** causes an increase in the **particle** size of the fillers. Anionic surfactants are generally better suited for waste paper systems containing CaCO3 than for those with kaolin. This is due to the fact that the adsorption onto CaCO3 occurs at lower concns. than that onto kaolin. Ca ions dissolved in the pulp improve the adsorption of anionic surfactant onto kaolin and are necessary for a sufficiently high recovery of the fillers.

L4 ANSWER 5 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN

TI Matting surface layer for silver halide photographic material
AB A photog. material comprising ≥1 Ag halide photog. emulsion layer containing a hydrophilic colloidal binder contains, over ≥1 of the emulsion layers, a matting surface layer comprising a binder and ≥2 different types of non-developmentally disolvable particles, one type of the particles comprising a matting agent having an average particle size of between 1 and 10 μm in a coating weight of between 0.015 and 0.15 g/m2 and the 2nd type of particles comprising buoying particles having an average particle size of between 0.20 and 0.75 μm in a coating weight of between 0.2 and 0.7 g/m2. The matting agent is preferably an inorg. material. The **buoying** particles preferably comprise an organic polymeric **material**. The combination of particle having different sizes is used to improve drawdown, reduce the starry night effect, and maintain the sensitometric quality of the photog. material.

L4 ANSWER 6 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN
TI Recovery of fine particles or ions from liquids
AB Fine **particles** or ions of metallic oxide, hydroxide, sulfate, carbonate, silicate, or phosphate are separated by **flotation** with a cationic **polymer** collecting **agent**. Thus, a colloidal (600 ppm) SiO2 suspension was floated with 5 ppm poly(dimethylaminoethyl methacrylate) acetate for 5 min to recover 99.8% SiO2. The residual SiO2 content was 1 ppm.

L4 ANSWER 7 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN
TI Wastewater treatment
AB A fibrous composite waste-treating agent consisting of oil emulsion-treatable fine inorg. **particles** or an organic **polymer** is added to a wastewater to adsorb the sludge **material** in an air **flotation** treatment process. The method requires no pH control, provides excellent filterability, and removes emulsifer oils. Thus, an autoclaved reaction product of MgCl2, high density polyethylene [9002-88-4], and methylene chloride [75-09-2] was formed to a filament (.apprx.15 mm long and .apprx. 5 μ diameter) to obtain the composite. A slurry containing 4% fibrous composite was added at 1500 ppm to a steel cold-rolling mill wastewater containing 680 ppm oil (2-14 μ size), air-flotation treated; the treated water contained 2 ppm oil, and the spontaneously combustible scum was dewatered easily.

L4 ANSWER 8 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN
TI Separation of vinyl chloride from its mixtures with other substances
AB Vinyl chloride (I) [75-01-4], PVC [9002-86-2], or vinyl chloride copolymers were separated from other nonplastic materials by introducing gas bubbles into an aqueous dispersion containing the mixture and a **flotation agent**, and floating the vinyl chloride component. Thus, 400 g of a mixture of I monomer and **polymer** with sand and dirt of **particle** size <5 mm was dispersed in 8000 ml. water and mixed with 30 g/ton pine oil. Gas was blown into the mixture for 5 min, floating the I which was collected with a 98% recovery rate.

L4 ANSWER 9 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN
TI Organic modifiers for flotation of ores containing clay
AB The mechanism of the action of some soluble polymers during flotation of K ores containing clay impurities was discussed. The presence of clay reduced the effectiveness of flotation. Addition of polymers leveled this neg. action as a result of KCl flotation activation. Two reagents should be combined as a modifier: one an activator for KCl flotation and the other depressor for clay flotation. Cation active polymers are more effective activators for KCl flotation than the anion active ones. Introduction of amide N into the **particles** of an anion-active **polymer** enhanced, in some cases, its activating action.

L4 ANSWER 10 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN
TI Relation between the structure of polymer molecules and their depressing

action during the flotation of potassium salts

AB The effect of mol. structure on the adsorption and repression capacities of polymers during flotation of K ores was studied by adsorption of polymer on washed clays in saturated KCl and NaCl solns. The modified starches and cellulose sulfoethyl ether (I), having a different number and character of functional groups in the mol. and therefore different structure of mols. in solution, were used during the study. Comparison of adsorption and depressing properties of polymers showed that the value of adsorption on clay is not the main factor during evaluation of depressing capacity of a reagent. The cornstarch, which absorbs well on the clay, cannot be used as a depressing **agent** because it has a low efficiency during ore **flotation**. The selectivity of starch increases with increased degree of oxidation up to a definite limit. I at low adsorption on clay has a high depressing effect similar to oxidized starches. The depressing effect of I increases with increased mol. weight In spite of relatively low adsorption on clay surfaces, the oxidized potato starches are good depressors of the effect of clay slimes during flotation of K ores. The mechanism of higher **polymer** adsorption on clay **particles** depends on the structure of **polymer** mol. The extended (uncoiled) **polymer** mols. can cover clay **particles** as continuous layers, whereas in coiled mols. a part of chain is screened by adjacent groups and enters into intramol. assocns., and cannot participate in interaction with particle surface. The parts of rock surface, not protected by depressor, adsorb **flotation agent**, decrease adsorption on KCl crystals, and decrease correspondingly the efficiency of flotation.